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Instruction Sheet for the Installation and Operation of

# The Humphrey Unit Heater No. 100

## I

### Before Attempting to Install This Heater Read Carefully the Following:

The Humphrey Unit Heater No. 100 is shipped complete and ready for installation.

Unpack carefully, saving floor flanges with which the heater support pipes are secured to crating.

The uncrating is best accomplished by removing all the top crating boards, excepting center plank. Remove the wood screws from the ends of the top support plank but do not attempt to remove the bolts through plank and floor flanges until after heater has been removed from crate.

If a block and tackle is at hand, the heater may now be raised directly up and out of crate by lifting on this top plank.

Take great care not to knock or jar governor on the rear end of motor shaft.



Manufactured by

**General Gas Light Company**  
Kalamazoo, Michigan



## II

### Location

The Humphrey Unit Heater No. 100 is designed for ceiling suspension. Locate hanging position where heater will have free sweep of the room to be heated, hanging as close to the ceiling as desirable. You may depend on the front air directing shutters to direct the heat downward.

## III

### To Install

Fasten floor flanges (furnished with heater) to ceiling, being careful to space them exactly on  $24\frac{7}{8}$ " centers. Screw into floor flanges nipples to give heater desired height—these should not be less than 18" long in order to have proper head room clearance.

Screw a 1" coupling on the down end of each nipple.

Now raise heater to hanging position (either by block and tackle or other means) so that the top end of heater support pipes "A" are 1" above the couplings on the down end of ceiling support pipes. Loosen support pipes "A" which are held in place by a set screw found at their upper ends. This will allow the support pipes to drop down for clearance.

Line up support pipes "A" with couplings on down pipes and screw support pipes "A" tightly into place.

## IV

### Connection

**GAS**—Using not less than a 1" size supply pipe from gas meter, connect heater, being sure to make a union connection at heater and locate a 1" shutoff valve in line at heater (see cut).

**ELECTRIC**—Using No. 14 wire, connect heater by a run of  $\frac{1}{2}$ " size conduit direct to motor bracket where will be found a conduit box with cover on under side, making connection easy.

## V

### Pilots

Turn on gas and clear gas supply line of air. Remove plugs "B" located beside pilot valves found at each end of heater and light pilots. Pilot flame should not exceed  $\frac{3}{4}$ " in length. As one of these pilot flames is used to maintain the electric circuit through the heating of our safety thermostatic line control, it will be necessary to allow two to five minutes to complete this connection. For further information refer to tag attached to thermostatic safety control.

## VI

### Motor

Oil motor bearings on each end of motor as per instructions found on tag attached to the motor. Read these carefully.

## VII

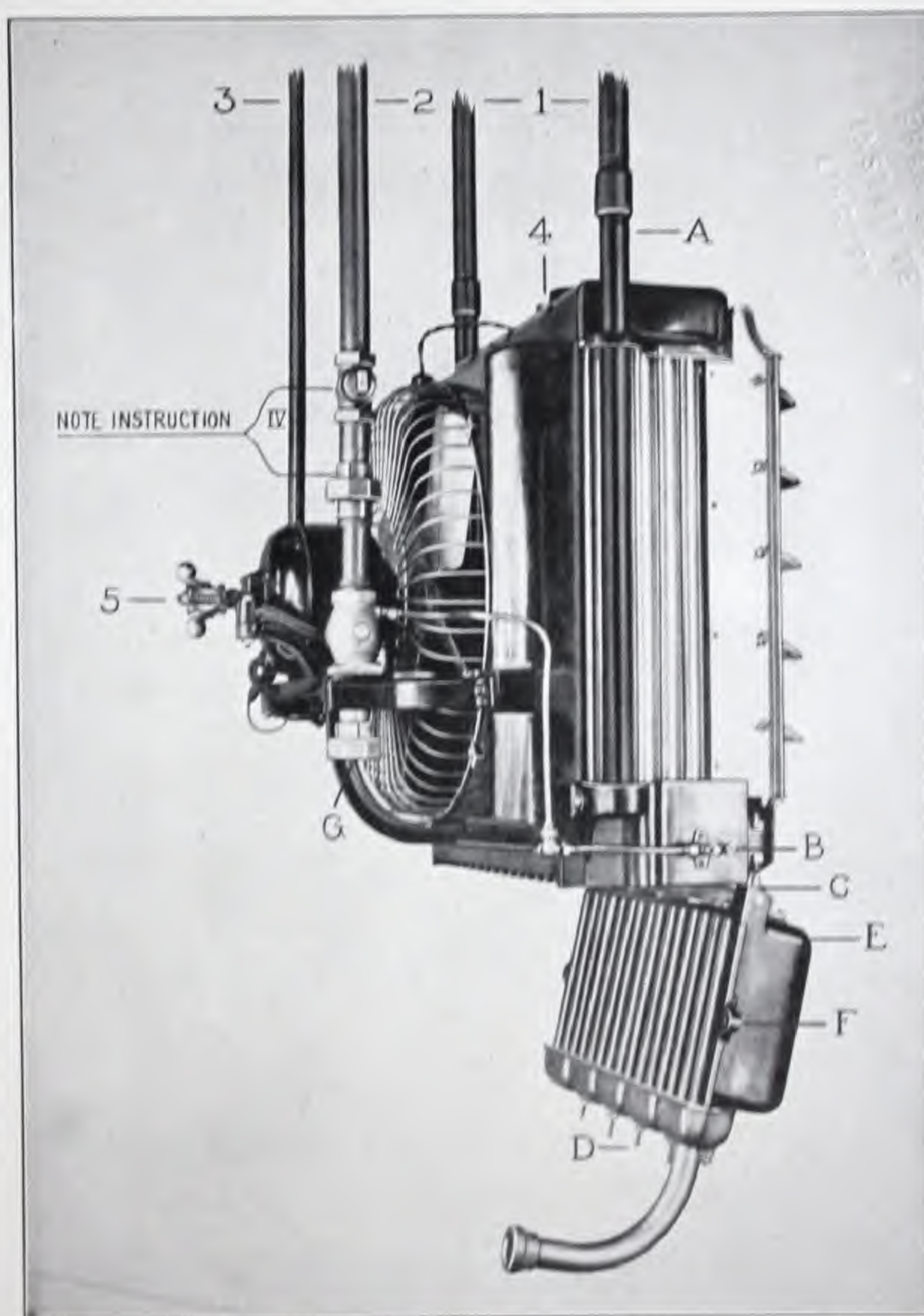
### Operation

The Humphrey Unit Heater No. 100 is now ready to operate. Simply start motor which may be controlled by any electric switch. The motor will automatically turn on the gas through the operation of the governor on the rear end of motor shaft. If the heater has the proper supply of gas (100,000 BTU's), it will deliver 1800 cu. ft. of heated air per minute, which is the equivalent of 400 sq. ft. of castiron radiation (steam).



**Showing the Humphrey Unit Heater No. 100 with burner box let down  
so that tubes can be cleaned**

- 1—Down support  
pipes and  
coupling.
- 2—1" gas supply.
- 3— $\frac{1}{2}$ " conduit en-  
casing electric  
wiring.
- 4—Thermostatic  
safety pilot  
control.
- 5—Governor for  
operating gas  
valve.
- A—Main support  
pipes.
- B—Pilot and light-  
ing plug.
- C—5 removable  
nozzle holders.
- D—Air adjusting  
screws.
- E—Hinged burner  
box.
- F—Burner box  
support screws.
- G—Union connec-  
tion for burner  
supply.





## VIII

### Regulation

The Humphrey Unit Heater No. 100 should be equipped with a gas nozzle large enough to supply the burner with 100,000 BTU's of your gas per hour.

If any change of gas nozzle is necessary, the change is readily made by removing nozzle holder "C" from exterior of the heater. When changing nozzles, be sure the new ones are screwed in tightly in order to avoid leaks.

Under certain gas or pressure conditions, intensified combustion will often result in a loud singing or howling noise which may be corrected with the air adjustment screws "D" found in the rear of burner head. To correct this condition, loosen lock nut on screws "D" and screw in all five adjustment screws until the noise is stopped.

When doing so, observe the flame, being careful not to kill combustion to the extent of producing a yellow tip flame.

Now, beginning at one end of the heater, open by screwing out one adjustment screw after the other as far as possible without allowing the singing noise to re-occur.

After any adjustment of these air screws, be sure and tighten lock nuts. Otherwise the motor vibration will alter adjustment.

**NOTE**—Where a variation in gas pressure is encountered, a gas pressure regulator should be installed in gas line that a constant gas pressure may be maintained.

Where possible, the following gas pressure is desirable:

Natural Gas—5" to 7½" pressure (Water Gauge)

**NOTE**—Before installing, read instruction tag attached to Unit.

**This Unit Heater is supplied with gas  
Regulator set at 3 inch water pressure.**

## IX

### Maintenance

In order that the Humphrey Unit Heater No. 100 may always operate at the highest efficiency, CLEAN RADIATING TUBES EVERY MONTH AND OIL MOTOR.

The cleaning of these radiating tubes is easily accomplished by lowering the hinged burner box "E" and cleaning radiating tubes with special brush, which we can furnish.

To lower burner box, it is only necessary that you first remove the two cap screws "F," one at each end of burner box, unfasten union "G" and swing burner box down. ALWAYS REPLACE CAP SCREWS "F". This will prevent the warping of burner box.

**When heater is not in use, shut off valve (Note instruction IV) should be kept closed.**

## X

### Venting

Because of the perfect combustion of this heater, it will not always be found necessary to vent heater out of doors. However, where it is deemed advisable to connect heater with flue, a 3" flue pipe will be sufficient to carry off the products of combustion. In unventilated rooms, always connect heater with vent in order to avoid moisture vapor deposit.

For office and showroom installations, we recommend copper, nickel-plated, polished vent pipe, which we can supply in 20 in. lengths; can also furnish elbows and ceiling tees. **CAUTION** For factory and other industrial jobs, we can supply blued or japan enameled steel pipe and elbows.

**A flue should always be used to direct products of combustion if not outdoors at least into the room and away from any combustible material.**

Prices on application.

## XI

### Thermostatic Control

The Humphrey Unit Heater No. 100 will operate direct from any mercury tube thermostatic control switch. However, if a number of these heaters are to be connected together and operated from one point, it will be necessary to operate through a relay switch. We can furnish thermostatic controls for these heaters with or without thermometers and also can supply relay switches where more than one heater is to be connected to the line.

We also can supply suitable thermostatic control with eight-day clock arrangement whereby temperature control can be changed for nighttime operation.

Full details and prices on application.